AP-7131 3.2.0.0-067R – Release Notes
72E-123256-01

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Introduction – AP-7131 802.11n Access Point

An AP-7131 is an 802.11n access point and Wireless IPS sensor. As a standalone access point, the AP-7131 provides small and medium-sized businesses with a consolidated wired and wireless networking infrastructure, all in a single device. Adaptive functionality enables distributed enterprises to extend a centrally-managed, high performance solution to small and medium sized branch locations. As a 2 port wireless router with integrated WLAN access, wired and wireless security services and cable/DSL broadband termination capabilities, the AP-7131 simplifies your deployment and reduces costs by eliminating the need to purchase and manage multiple devices.

The AP-7131 besides providing client access, layer 3 and mesh networking services, can concurrently operate as a 24x7 802.11 a/b/g/n monitoring sensor for Wireless Intrusion Prevention. This enables high-performance data, voice and video solutions as well as gap-free security in one single device at a lower total cost of operation compared to dedicated sensor solutions.

Entitlement

Customers are only entitled to convert to this release of the software if they have a valid Motorola service agreement or are covered under warranty. Customers who currently have a support contract in place will be able to download the software from a protected Web site (this requires registering and requesting the software, as well as verifying the service contract). Customers who do not have a support agreement will be provided options to purchase a Motorola service contract.

Additional Features

The AP-7131 includes support for 802.11abgn. AP-7131's 11n support is based on IEEE 802.11n Draft 2.0. IEEE 802.11n is a next generation wireless technology that delivers dramatic improvements in the reliability, speed and range of 802.11 communications.

This 3.2.0.0-067R software release extends support for the following additional features:

1. *Wireless Intrusion Prevention (WIPS) Sensor*: 802.11a/b/g/n WIPS sensor functionality is now supported on the AP-7131. The single or dual-radio AP-7131 supports dedicated dual-band WIPS sensing on one radio or two radios. Motorola AirDefense Enterprise version 7.3.3 or higher is required to support the AP-7131 as WIPS Sensor for monitoring and policy enforcement of 802.11n infrastructure. Supported features include: alarm detection, 802.11 a/b/g/n protocol analysis, LiveView, forensic analysis, and location tracking.
2. *Adaptive AP MESH*: A centrally managed adaptive Wireless MESH architecture is now supported on the AP-7131. Client bridge backhaul, radio configuration for client bridge and base bridge modes (MESH) is supported (on both 20MHz & 20/40MHz) and configurable by a RFS6000 or RFS7000 model wireless switch. Wi-NG version 4.0 is required on Motorola RFS6000 and RFS7000 for Adaptive AP support on AP-7131 version 3.2. Wi-NG version 4.0 will also support Adaptive WIPS sensor configuration and management on AP-7131 version 3.2.
3. *Power Utilization Enhancements*: The AP-7131 now operates two radios and one Gigabit Ethernet Interface (GE1) at 12.95Watts of power. If the user selects the 802.3af Power mode, the AP-7131 automatically shuts off the second Gigabit Ethernet Interface (GE2). If the user selects Automatic mode, the AP-7131 automatically configures the AP's operational mode so it properly operates within available power with at least two radios and one LAN port operational on a dual radio AP. A single radio AP-7131 is fully compliant with 802.3af.
4. *RFMS Support*: An AP-7131 3.2.0.0-067R can be managed using RFMS version 3.1 or later.
5. *HotSpot*: The AP-7131 offers HotSpot WLAN configuration to provide guest access with authentication services provided by an external Radius/AAA server. Tested Radius servers include the on-board Radius server on Motorola's RFS6000 and RFS7000 Wireless Switches.

Please refer to the AP-7131 *Product Reference Guide* (PRG) for a more detailed explanation of these features and how they're configured. The guide is available at *http://support.symbol.com/support/product/manuals.do* within the Wireless Infrastructure directory.

PoE & Gigabit Ethernet Port Labels

The AP-7131 features upgraded Gigabit Ethernet (GE) ports. These ports are labeled as follows:

- GE1/ PoE: GE1 is the LAN Port and supports 802.3af, 802.3at (draft) PoE.
- GE2: GE2 is the WAN port.

Single radio models can operate fully with 802.3af power sources. Dual radio models can also power up two radios and GE1 interface with 802.3af power sources. At higher power levels, both radios and ethernet interfaces are fully functional in the dual radio models. Both models can also operate using an A/C power supply.

The following table shows the radio and LAN resources available under various power configuration modes for the dual radio model

Available Power	Radio Resources	Ethernet Port Configuration
13 watts Power Status: 3af	2 Radios	GE1 10/100/1000
18 watts Power Status: Mid Power	2 Radios	GE1 10/100/1000 GE2 10/100
24 watts or External power supply Power Status: Full Power	2 Radios	GE1 10/100/1000 GE2 10/100/1000

When a Motorola 802.3af power injector (AP-PSBIAS-T-1P-AF) is used with AP-7131, then the GE1 or LAN1 port will be limited to 10/100 Mbps. Motorola recommends the 802.3at (Draft) power injector (AP-PSBIAS-1P3-AFR) to be used with AP-7131.

Access Points Hardware / Software Compatibility Matrix

The following table shows the compatibility between AP-7131 hardware and firmware revisions.

AP-7131 Hardware Revisions	Hardware RevA	Hardware RevB or later
AP-7131 Firmware Revisions	3.0.0 3.0.1 3.0.2 3.1.1 (Adaptive AP only with Wi-NG version 1.3.1) 3.2.0	 3.0.1 3.0.2 3.1.1 (Adaptive AP only with Wi-NG version 1.3.1) 3.2.0

AP-7131 Default Configuration

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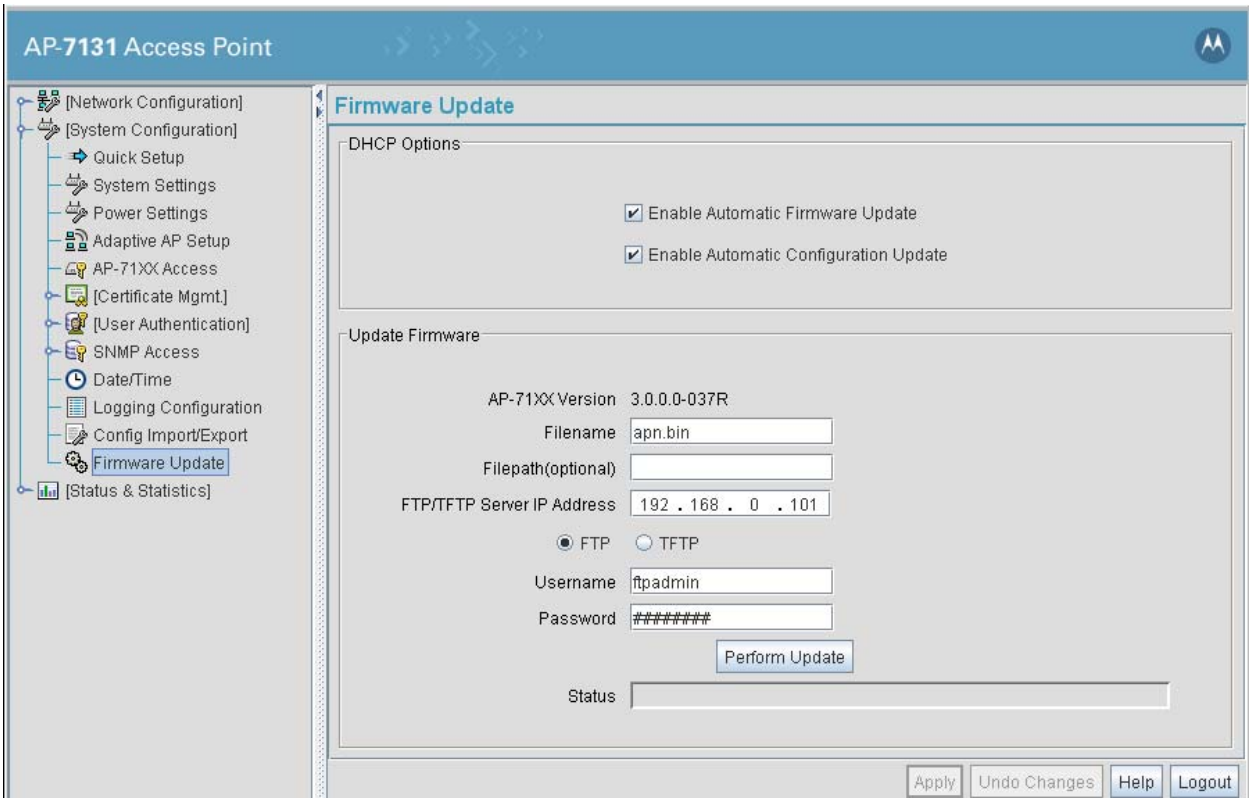
WAN (a.k.a GE2)	Static IP: 10.1.1.1 Static Mask: 255.0.0.0 Port Settings: Auto
LAN1 (a.k.a GE1)	DHCP Client Auto-update enabled Default Gateway Ethernet Port Enabled Port Settings: Auto
LAN2	Disabled
Access via LAN1 port	HTTP, HTTPS, Telnet, SSH, SNMP: enabled
Access via WAN Port	HTTP, HTTPS, Telnet, SSH, SNMP: enabled

Firmware Update

Version V3.2.0.0-067R is the fifth officially supported firmware release for the AP-7131. AP-51x1 firmware and configurations are not supported on the AP-7131.

To conduct a firmware update on the AP-7131:

1. Select 'System Configuration' → 'Firmware Update' from the AP-7131 menu tree of the GUI.
2. Specify the name of the target firmware file within the 'Filename' field.
3. If the target firmware file resides within a directory, specify a complete path for the file within the 'Filepath (optional)' field.
4. Enter an IP address for the FTP or TFTP server used for the update.
5. Select either the FTP or TFTP button to define whether the firmware file resides on a FTP or TFTP server.
6. Set the following FTP parameters if applicable:
    - *Username* - Specify a username for the FTP server login.
    - *Password* - Specify a password for FTP server login.



7. Click ‘Apply’.
8. Click the ‘Perform Update’ button to initiate the update. Upon confirming the firmware update, the AP reboots and completes the update. This step may take several minutes.
9. After the AP reboots, clear the browser cache and return to the ‘Firmware Update’ screen. Check the Status field to verify whether the firmware update was successful.

Resetting the AP-7131 Password

The AP-7131 *Command Line Interface* (CLI) enables users who forget their password to reset it to the factory default (‘motorola’). To reset the AP-7131 password: Connect one end of the null modem serial cable to the AP-7131’s console connector. (Use cable p/n 25-97593-01R for the AP-7131). Attach the other end of the null modem serial cable to the serial port of a PC running HyperTerminal or a similar emulation program.

1. Set the HyperTerminal program to use 19200 baud, 8 data bits, 1 stop bit, no parity, no flow control and auto-detect for terminal emulation.
2. Press <ESC> or <Enter> to access the AP-7131 CLI. A serial connection has now been established and the user should be able to view the serial connection window.
3. Reset the AP-7131. An AP-7131 can be reset by removing and re-inserting the LAN cable (if you are not using power supply) or removing and re-inserting the power cable. As the AP-7131 is re-booting, a “Press esc key to run boot firmware” message displays.
4. Quickly press <ESC>. If the <ESC> key is pressed within three seconds a boot> prompt displays.

5. Type the following at the boot prompt: **passwd default**
6. Reset the AP-7131 by typing the following at the boot prompt: **reboot system**. When the AP-7131 re-boots again, the password will return to its default value of "motorola". You can now access the AP-7131.

AP-7131 MAC Addresses

The AP-7131 has one MAC address for each Gig Ethernet port, which are displayed in 'LAN Stats' and 'WAN Stats', under the 'Status and Statistics' page in the Web User Interface.

Each radio on an AP-7131 supports four *Basic Service Sets* (BSS). Each BSS, has a corresponding MAC address. The MAC address (displayed in the Web interface under the Radio Settings screen) corresponds to BSS #1. The MAC addresses for the other three BSS's (BSS #2, #3, #4) are derived by adding 1, 2, 3, respectively, to the radio MAC address (same as BSS #1).

For example: If the radio MAC address displayed under the Radio Settings screen (Network Configuration → Wireless → Radio Configuration → Radio<n>) is 00:23:68:72:20:DC , then the BSSs for that radio will have the following MAC addresses:

BSSID	*MAC Address*	*Hexadecimal Addition*
BSSID#1	00:23:68:72:20:DC	Same as Radio MAC Address
BSSID#2	00:23:68:72:20:DD	Radio MAC Address + 1
BSSID#3	00:23:68:72:20:DE	Radio MAC Address + 2
BSSID#4	00:23:68:72:20:DF	Radio MAC Address + 3

SPR Fixes and Bug Fixes in 3.2.0.0-067R

1. SPR 15809: SNMP apRadioNSettingsBasicRates fails to set the desired basic rates
2. SPR 15855: SNMP OID issue with MIB - apSubnetDchpState for LAN1
3. SPR 16233: AP-7131 does not respond to Broadcast SNMP get
4. SPR 16240: AP-7131 specific named MIB file
5. SPR 16543: AP-7131 resets after configuration of MESH and radio parameters
6. SPR 16581: AP-7131 WPA2-TKIP connectivity denial with certain wireless adapters
7. SNMP: For a single radio AP, SNMP allows to set 11b mode param-set for qos, when rf-band is 5.0GHz.
8. CQ# 52163: WLAN-BSS mapping: For a single radio AP, configured for A mode, wlan-bss mapping happens incorrectly.
9. CQ# 51956: GUI: reset to factory default doesn't reboot the AP.
10. CQ# 52476: Import/Export: does not set power level correctly on 802.11a radio (single and dual radio APs).

Known Issues & Recommendations

A review of the following **Known Issues** is highly recommended:

- CQ# 47480: Single Radio AP: Channel changed from CLI does not get reflected in GUI.
- CQ# 52396: Current Date under Date and Time can only be changed once manually
- CQ# 52529: SNMP: Cannot create a white-list for hotspot wlan through SNMP
- CQ# 52530: SNMP: apRadiusUsersGroupTable and apRadiusAccessTable are not functional
- CQ# 54585: Subnet mask validation is not done properly. Network Administrator needs to ensure proper subnet mask entry
- CQ# 54649: SSH: not able to ssh into the AP when external Radius server is configured
- CQ# 54802: Autoneogtiation: AP Ethernet port duplex settings needs to match remote device port settings
- CQ# 54854: PPPoE: PPPoE connection often does not recover after disconnecting cable for more than a minute
- CQ# 55059: SNMP: DynDNS mode cannot be set to true (enable) using SNMP
- CQ# 55073: DynDNS: WAN link is down and does not come up till WAN cable is plugged out and plugged in with DynDNS enabled
- Certain special characters are invalid for an ESSID such as space < > | " & , \ ?
- NAT: Transport protocols selected as AH do not work with outbound firewall using NAT
- Reconfiguring Gigabit Ethernet autonegotiation or port characteristics while the Gigabit Ethernet port is connected to the LAN and used for administrative access is not recommended
- VPN, Onboard IDS, RIP and On-board AAA server are not supported in this release.

A review of the following **Known Sensor Issues & Recommendations** for WIPS operation is highly recommended:

- Ad-Hoc Termination is not supported.

The AP-7131 used as a WIPS sensor with external antennas requires dual-band antennas that cover both the 2.4 GHZ and 5 GHz spectrum.

A dual-radio AP-7131 used as a WIPS sensor with one radio dedicated to 2.4 GHz and the second radio dedicated to 5 GHz scanning will typically collect more frames and store a larger amount of forensic data points than an AP-7131 with only one radio dedicated to scanning both the 2.4 GHz and 5 GHz bands.